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Original Research Paper

General Surgery

A COMPARATIVE STUDY ON OUTCOME OF SURGICAL MANAGEMENT OF VARICOSE VEINS WITH AND WITHOUT VENOUS STRIPPING

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ABSTRACT Varicose veins, a chronic venous disorder affecting the superficial venous system of the lower limbs, significantly impairs quality of life despite their non-lethal nature. This prospective, comparative observational study was conducted at Maharajah's Institute of Medical Sciences to evaluate and compare postoperative outcomes in patients undergoing surgical management of varicose veins with and without venous stripping. Fifty patients diagnosed with primary varicose veins involving saphenofemoral and perforator incompetence were randomly divided into two equal groups: Group I underwent Trendelenburg operation with venous stripping, and Group II received Trendelenburg operation without stripping. Parameters assessed included postoperative hematoma formation, wound healing, ambulation comfort on the first postoperative day, hospital stay duration, and pain relief after two months. Results demonstrated that while venous stripping was associated with a slightly higher rate of postoperative hematoma, it showed superior long-term pain relief and fewer incidences of delayed wound healing. The study concludes that selective use of venous stripping in surgical treatment of varicose veins may provide better symptomatic relief and functional recovery, supporting its continued use in appropriately selected cases.

KEYWORDS : Varicose Veins, Venous stripping,

INTRODUCTION

Since the beginning of historical writings, it has been established that varicose veins are among the oldest diseases in human history.

In 460 B.C.,Hippocrates[1] coined the term varicose vein. Varix means swollen vein, artery, or lymphatic in Latin[2] . The terms varix and varicosity, which describe a vein that is tortuous and has an increased diameter, are frequently used interchangeably.

Definition:

Varicose veins are superficial or subcutaneous veins of the lower limb that has lost its valvular function and as a result of resulting venous hypertension becomes dilated, thickened and tortuous[3] .

Telangiectasia to protuberant superficial varicose veins with or without oedema, dermatitis, lipodermatosclerosis, and venous ulcers are the two extremes in severity of varicose veins[4] . It is a progressive disease which worsens as day passes. Though not a very fatal disease the morbidity caused by this disease is more. Conservative, surgical, and endovenous therapy are the potential therapeutic modalities. The treatment option should be individualized based on their general condition and symptomatology of the patient.

In this comparative study the outcome of surgical management of varicose veins with and without venous stripping is compared and analysed.

Objectives Of The Study

The main objective of this comparative study is to compare the outcome of two surgical treatment modalities of varicose veins. The Trendelenburg's technique(Flush ligation of saphenofemoral junction) is performed on one group of patients where only the incompetent perforators are subfascially ligated, and the long saphenous vein from the groin to the knee is stripped along with Trendelenburg's procedure for the other group of patients.

The Two Modalities Are Compared In Terms Of

1. Hematoma formation in the thigh.
2. Healing of wounds in the leg at the site of incompetent perforators.
3. Comfortable ambulation without much pain on first post-operative day.
4. Postoperative hospital stay.
5. Pain relief of the patient after two months.

MATERIALS AND METHODS:

Study Design: Comparative Prospective Observational Study

Study Population: patients presenting to General Surgery department- OPD in Maharajah's Institute of Medical Sciences, Vizianagaram.

Inclusion Criteria:

1. Varicose vein with saphenofemoral valve incompetence and perforators incompetence.
2. Age between 16 and 70 years.

Exclusion Criteria:

1. Age extremes of < 16 and > 70 years.
2. Patients with deep vein thrombosis.
3. With associated short saphenous vein varicosity.
4. With venous ulcer or other skin changes
5. Recurrent varicosity.

Study Period: December 2023 to May 2025

Sample Size: Out of 75 patients of varicose veins operated in general surgery department, 50 patients were selected for the study.

Sampling Technique: Simple Random sampling

The selected cases were matched for sex, age so as to avoid bias.

Table No.1: Age And Sex Matching

S no	Matched items	With venous stripping	Without venous stripping
1	Male	20	21

2	Female	5	4
3	16- 40 years	10	11
4	41- 70 years	15	14

Methodology :

The 50 Patients Were Categorised Into Two Groups:

Group 1 : 25 patients underwent Trendelenburg's operation with venous stripping.

Group 2 : 25 Patients underwent Trendelenburg's operation without venous stripping.

Statistical Analysis Of This Study:

To determine whether the results of two surgical procedures differed significantly, the two observations were statistically compared.

The Null Hypothesis Was Assumed: that the two procedures are not significantly distinct from one another.

Every single variable was examined for significance using the chi-square testwith 2x2 table and degree of freedom is 1.

The difference is considered statistically significant if the p value is less than 0.05 and the chi-square value is more than 3.84.

Observations:

The following observations were recorded by follow up of the patients for a period of two months.

Table No.2: Frequency Distribution Of Observed Variables In The Study Population.

S No	Factors compared	With venous stripping		Without venous stripping	
		Number (out of 25)	Percentage	Number (out of 25)	Percentage
1	Hematoma	7	28%	1	4%
2	Delayed wound healing	1	4%	1	4%
3	Comfortable ambulation on first postop day	17	68%	23	92%
4	Long hospital stay	2	8%	1	4%
5	Pain relief	24	96%	22	88%

The Factors That Are Taken For Comparison Are:

1. Hematoma Formation In The Thigh:

Table No.3: Association Of Hematoma Formation With And Without Venous Stripping In The Study Population (n=50).

Procedure	Hematoma in thigh		No hematoma		Total	
	n	%	n	%	n	%
With venous stripping	7	28%	18	72%	25	100%
Without venous stripping	1	4%	24	96%	25	100%
Total	8	16%	42	84%	50	100%
chi-square value = 5.34 (95% CI), df=1, p= 0.04, inference= **statistically significant**						

There is a significant difference between the two procedures in terms of hematoma formation, and the null hypothesis is not true.

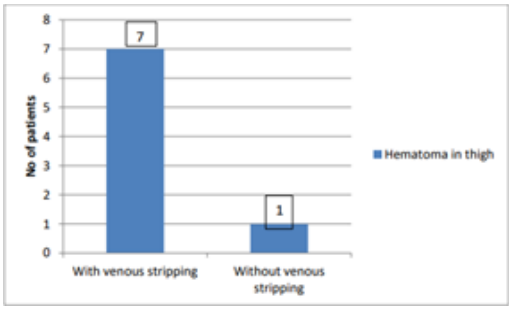

Figure No.1: Frequency distribution of hematoma formation in thigh.

2. Healing Of Wounds In The Leg At The Site Of Incompetent Perforators:

Table No.4: Association Of Wound Healing With And Without Venous Stripping In The Study Population (n=50).

Procedure	Good wound healing		Delayed wound healing		Total	
	n	%	n	%	n	%
With venous stripping	24	96%	1	4%	25	100%
Without venous stripping	24	96%	1	4%	25	100%
Total	48	96%	2	4%	50	100%
chi-square value = 1.34 (95% CI), df=1, p= 1.0, inference= not statistically significant						

There is no significant difference between the two processes, and the null hypothesis is correct.

3. Comfortable Ambulation Without Much Pain On First Post Operative Day:

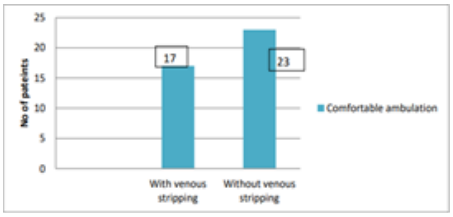

Figure No.2: Frequency distribution of comfortable ambulation.

There is a significant difference between the two procedures in terms of comfortable ambulation and the null hypothesis is not true.

4. Long Post- Operative Hospital Stay:

Table No.6: Association Of Long Post-operative Hospital Stay With And Without Venous Stripping In The Study Population (N=50).

Procedure	<6 days		>6 days		Total	
	n	%	n	%	n	%
With venous stripping	23	92%	2	8%	25	100%
Without venous stripping	24	96%	1	4%	25	100%
Total	47	94%	3	6%	50	100%
chi-square value = 0.356 (95% CI), df=3, p= 1.09, inference= not statistically significant						

There is no discernible difference between the two processes, and the null hypothesis is correct.

5. Pain Relief After Two Months:

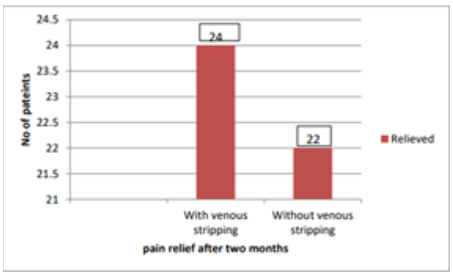

Figure No.3: Frequency distribution of pain relief after two months.

There is no discernible difference between the two procedures, and the null hypothesis is correct.

Therefore, the only variables that showed a significant difference between the two procedures were the hematoma formation and the degree of comfort in ambulation without much pain on the first postoperative day.

DISCUSSION:

This study when compared to other studies in the literature

showed the following results.

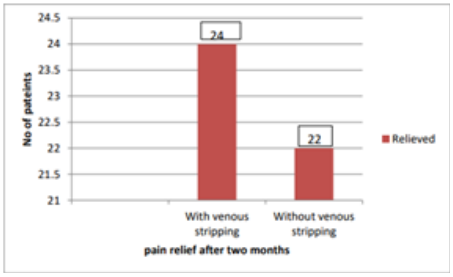

Figure No.4: Comparison of Gender distribution with study done by MG VASHIST et.al.(22).

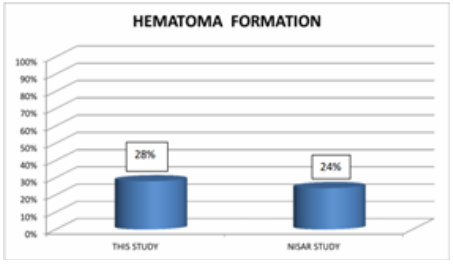

Figure No.5: Comparison of hematoma formation with study done by NISAR et. al.(23).

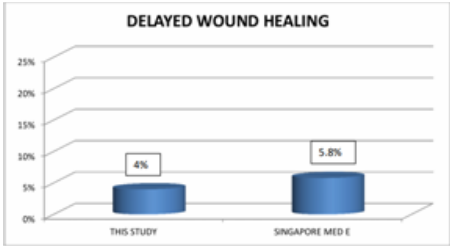

Figure No.6: Comparison of delayed wound healing with study done by MH KAM et.al.(24).

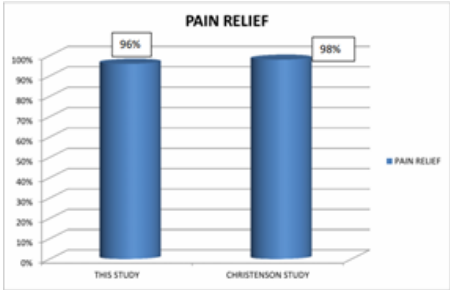

Figure No.7: Comparison of pain relief (during the follow up period) with study done by CHRISTENSON et.al.(25).

CONCLUSIONS

Short-term data variables from this comparison study, which involved 50 patients, shows that venous stripping only raises the chance of hematoma formation but the patient's pain on first post-operative day was comparatively lesser than the group that did not undergo venous stripping , thus providing comfortable ambulation. There is no significant difference between the two procedures in terms of pain alleviation, hospital stay, or wound healing. However, the hematoma formation can be prevented by adequate haemostatic techniques.

Hence, this study concludes that selective use of venous stripping in surgical treatment of varicose veins may provide better symptomatic relief and functional recovery, supporting its continued use in appropriately selected cases.

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